United States
Department of
Agriculture

Service Center
Modernization Initiative
(SCMI)

STANDARD

Geospatial Dataset File Naming

DRAFT

June 24, 2004

Prepared by:
Randy Frosh, Data Management Team Member

Introduction

As directed by the Secretary of Agriculture's March 16, 1998 memorandum, the Natural Resources Conservation Service (NRCS), Farm Service Agency (FSA), and Rural Development (RD) agencies are co-locating offices, modernizing business processes, and partnering to achieve a "one-stop service" for United States Department of Agriculture (USDA) customers at their county-based field offices (Service Centers). One of the major components of the modernization initiative involves the implementation of a Geographic Information System (GIS) across each of the Partner Agencies and in all 2,550 Service Center offices. A Service Center Data Team has been chartered with the overall responsibility for implementing an infrastructure for management of data resources for the Partner Agencies. The GIS Standards Team 5 was formed to address specific data management issues regarding geospatial data.

The individuals who contributed to the development of this standard are:

David Anderson, (NRCS) Service Center Data Team Leader

Dennis Crow (RD)	David Davis (FSA)	Larry Davis (NRCS)
Carol Ernst (FSA)	Randy Frosh (Synergetics)	Kathy Green (NRCS)
Shirley Hall (FSA)	Steve Nechero (NRCS)	Kent Williams (FSA)

Figure 1 — Working group list

RECORD OF CHANGE

Revision/Change Number	Update Number	Date of Change	Description/Reason for Change	Pages/Sections Affected
2	1	25-Jan-01	Revision of 30-Aug-99 SCI Std 004-01	All
3	1	15-Oct-03	Use IO Lab template	All
4	1	20-Feb-04	elevation/ned*, hydrography/nhd*, soils, imagery/naip*,ortho/*, Remove USGS 24k DLG names, Add ortho/highres.	Table 1
5	1	24-Jun-04	Add Tele Atlas layers, clu_public, clu_copy	Table 1

ARC/INFO is a registered trademark of Environmental Systems Research Institute, Inc.
ArcView is a registered trademark of Environmental Systems Research Institute, Inc.
Microsoft Access 97 is a registered trademark of Microsoft Corporation.
Microsoft Access 2000 is a registered trademark of Microsoft Corporation.
MrSid is a registered trademark of LizardTech, Inc.

Table of Contents

1. Overview 1
1.1. Scope 1
1.2. Purpose 1
1.3. Acronyms and abbreviations 2
2. Background 3
3. Geospatial Dataset Collection 4
4. Geospatial Dataset Category 4
4.1. Geospatial dataset category naming 5
5. Geospatial Dataset 5
5.1. Geospatial dataset naming 5
6. Standard Characters 7
6.1. Special characters 8
6.2. Case sensitivity 8
6.3. Allowable standard characters 8
7. Name Length 9
8. Area of Interest 9
9. Local Data 10
9.1. Existing "geospatial dataset category" 10
9.2. project_data directory 10
9.2.1. Local data naming 10
10. Geospatial Data Directory Structure: "geodata" 10
10.1. Overview 11
10.2. Table notations 11
Appendix A – Bibliography 22

Table of Figures and Tables

Figure 1 — Working group list i
Figure 3.1 — Geospatial Dataset Collection 4
Figure 4.1 — Geospatial Dataset Categories 5
Figure 5.1 — Geospatial File Naming 7
Figure 6.1 — Directory/Folder and File Allowable Characters 8
Table 1—Geospatial directory structure and naming conventions 13

This page is intentionally left blank

STANDARD FOR GEOSPATIAL DATASET FILE NAMING

1. Overview

The objectives of this standard are to help in managing United States Department of Agriculture (USDA) Service Center Modernization Initiative (SCMI) geospatial data by establishing directory (folder) and file naming conventions; support the concurrent USDA Service Center Modernization Strategy to develop a basic nationally consistent set of core geospatial data that will provide a foundation on which to base business applications; and to relate to other SCMI geospatial standards including SCMI Std 003, *Standard for Geospatial Data Set Metadata* [A2][1], SCMI Std 005, *Standard for Geospatial Feature Metadata* [A3], SCMI Std 007, *Standard for Geospatial Data* [A4], and the *USDA Service Center Initiative Directory Structure and File Naming Convention Change Control Policy* [A6].

Appendix A of this standard provides bibliography references to the documents listed above.

1.1. Scope

The scope of this standard is to define the directory and file naming conventions for the *geospatial dataset collection* (physical repository of data) that resides at a Service Center. This standard shall apply to the set of nationally consistent core geospatial data layers first defined in the *USDA Service Center Geographic Information System (GIS) Strategy* [A5]. It also provides standards on the directory structure and file naming for locally acquired and derived geospatial data.

The Manual for Managing Geospatial Datasets in Service Centers [A7] had also provided directory/folder and file naming conventions. However, the manual is a temporary document provided to assist with geodata migration at service centers. The Standard for Geospatial Dataset File Naming will be the official document outlining geodata file naming conventions. Future revisions to the file naming standard will not be reflected in the Manual for Managing Geospatial Datasets in Service Centers.

1.2. Purpose

GIS for the Service Center is expected to comprise nationwide coverage of more than 20 common *geospatial datasets* (a group of similar spatial phenomena) that are collected and distributed at the county level of geography. To organize this data at the Service Center so that it is accessible, maintainable and updateable requires a standard scheme for categorizing the data into directories and establishing names and conventions for the files in the directories.

This document identifies the directories and file names for existing common geospatial dataset categories. It will continue to evolve as nationally consistent datasets are provided to the Service Centers. This standard will be placed under configuration management and maintained through a structured change control process because the impact of changing this standard can be great on those applications that use the data and those who provide the data. The change control process will allow proposed changes to be reviewed and discussed by those affected by the changes.

[1] The number in brackets corresponds to those of the bibliography in Appendix A.

Nationally fielded applications will be developed that rely on the nationally consistent set of geospatial data. These applications will rely on the integrity of the data in meeting the specifications in this standard. Applications that are built locally for a Service Center or for data that is acquired locally shall adhere to these standards.

1.3. Acronyms and abbreviations

BPR	Business Process Reengineering
CCE	Common Computing Environment
CD-ROM	Compact Disc Read Only Memory
CLU	Common Land Unit
DEM	Digital Elevation Model
DLU	District Land Unit
DMF	Digital Map Finishing
DOQ	Digital Ortho Quadrangle
DOQQ	Digital Ortho Quarter Quadrangle
DRG	Digital Raster Graphs
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIPS	Federal Information Processing Standard
FSA	Farm Service Agency
FWS	Fish and Wildlife Service
GIS	Geographic Information System
GNIS	Geographic Names Information System
ISO	International Standards Organization
MDOQ	Mosaicked Digital Ortho Quadrangles
MLRA	Major Land Resource Areas
MrSID	Multi-resolution Seamless Image Database
NAIP	National Agricultural Imagery Program
NAPP	National Aerial Photography Program
NASIS	National Soil Information System
NCGC	National Cartography and Geospatial Center
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetland Inventory
OIP	Office Information Profile
RD	Rural Development
SSA	Soil Survey Area
SCMI	Service Center Modernization Initiative
SSURGO	Soil Survey Geographic Database
STSSAID	State Soil Survey Area ID
TIF	Tagged Image File
US	United States
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
WBD	Water Boundary Data
WRP	Wetland Reserve Program

2. Background

The *USDA Service Center Geographic Information System (GIS) Strategy* [A5] first defined a list of geospatial datasets required to provide a foundation on which to base business applications. The *Geospatial Data Acquisition, Integration, and Delivery National Implementation Strategy Plan* [A1] further refined and expanded this list. This list was organized into logical categories based on business names. It is these logical categories that form the basis for the organization of the physical directory structure defined in this standard.

The SCMI Std 007, *Standard for Geospatial Data* [A4] includes a geospatial data model that details a hierarchical classification that shall be used to categorize, or provide taxonomy for, geospatial data. These categories are referred to as *geospatial dataset categories.* This model and classification shall be used to identify and describe geospatial data in a consistent way. The *geospatial dataset categories* in the model are used as the basis for the directory structure in this document.

The top level of the geospatial data model is referred to as a *geospatial dataset collection*. A *geospatial dataset collection* is a catalog and physical repository of *geospatial datasets*. For example, an USDA data mart that serves geospatial data to only one Service Center or an USDA national data warehouse that serves geospatial data to all Service Centers is a *geospatial dataset collection*.

This standard is based on the lessons learned during the initial fielding of geospatial datasets at the BPR pilot sites. This document replaces the initial directory and naming conventions established for BPR pilot sites known as version 5. In addition to creating a flatter directory structure, each dataset name within each geospatial dataset category will provide a consistent naming convention that will offer a standard method of dataset identification including name, data type and location. The directory structure and naming conventions follow in the subsequent sections. The geospatial data model is used as the basis for the directory structure in this document.

3. Geospatial Dataset Collection

The entire *geospatial dataset collection* at the top level of the directory shall be located on a designated drive and named "geodata". There shall be only one “geodata” occurrence in any given Service Center on the shared network server. The standard directory structure for the *geospatial dataset collection* is as follows:

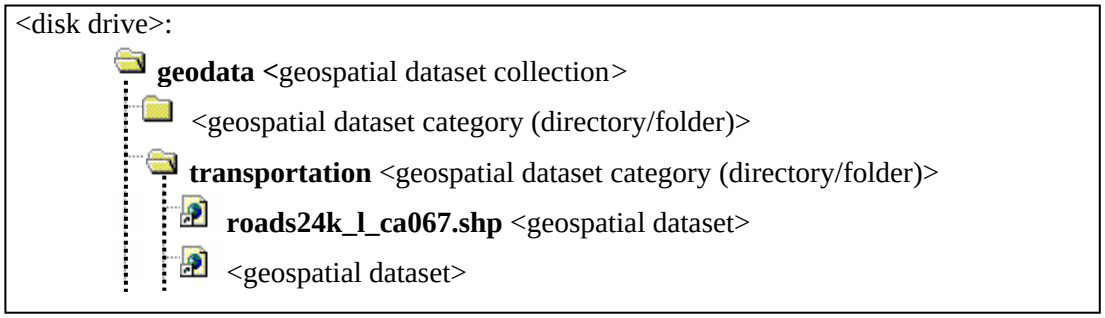

Figure 3.1 — Geospatial Dataset Collection

An example of the physical path to a road map using this standard on NT would be
C:\geodata\transportation\roads24k_l_ca067.shp
On the Service Center server the physical path would be F:\…

For UNIX it would be
/geodata/transportation/roads24k_l_ca067.shp

4. Geospatial Dataset Category

The next level in the geospatial data model is a *geospatial dataset category, which* is a logical group or division of a *geospatial dataset collection*. A *geospatial dataset category* is analogous to a computer directory or folder. There can be multiple occurrences of *geospatial dataset* categories under the *geospatial dataset* collection (“geodata”) level. A *geospatial dataset category* may include at least one *geospatial dataset* complete with all metadata and feature data including geometry, attributes, labels and symbology. However, an empty directory can exist as a 'place holder' for future data. Additionally, *geospatial dataset categories* are allowed to have sub-directories as in the case of climate. However, this is generally discouraged.

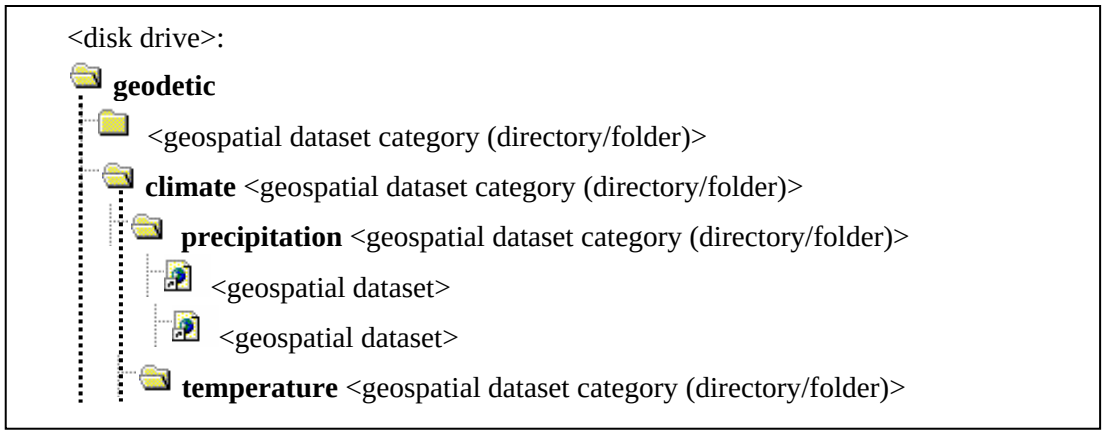

Figure 4.1 — Geospatial Dataset Categories

4.1. Geospatial dataset category naming

In this second level data hierarchy, the physical directory name previously used upper case characters and spaces. In practical applications these two practices cause problems migrating datasets between UNIX and NT platforms. As a result, this standard requires that the physical implementation of the category directory names shall consist of **only** lower case characters "a-z". Additionally, the underscore character "_" shall be used in place of a space in a directory name. Allowable characters are covered in detail in section 6.

The SCMI Std 007, *Standard for Geospatial Data* [A4] identifies the *geospatial dataset categories* used in this standard. These standard category or directory names are also shown in Table 1. The standard name used for each directory hopefully shall reflect a name that is commonly used and understood by Service Center personnel when referring to the *geospatial dataset category*. For example, *geospatial dataset categories* include common_land_unit, ortho_imagery and soils (see Table 1).

5. Geospatial Dataset

A *geospatial dataset* is a group of similar spatial phenomena in a *geospatial dataset category* and is related to one metadata set. A *geospatial dataset* is often referred to as a layer, theme, coverage, or simply a map. For example, the *geospatial dataset category* hydrography could contain the *geospatial datasets* surface water, water control infrastructure and flood hazard maps. The surface water *geospatial dataset* contains streams represented as lines, ponds represented as polygons and wells represented as points.

5.1. Geospatial dataset naming

Table 1 shows the standard file name for each dataset. Table 1 also provides a description of the dataset. Naming standards apply to all nationally distributed datasets. It is recommended that file naming similar to the standards in this document be used for state-defined and locally defined datasets.

The names are designed to be unique within the entire geodata directory. They maintain their uniqueness even if the category or directory names are eliminated from the structure. Moving

files between computers, and between offices, makes unique file names a necessity. Non-unique file names often result in the loss of data when a file is unintentionally overwritten during the moving of data.

The standard file names convey as much information as possible and reflect encoding into the name of:

- dataset theme
- type of map features in the dataset
- spatial location or extent of the dataset
- files extension (as applicable)

As a result, the dataset name contains

- a short version or acronym used to represent the business name of the dataset
- feature type designation p-point, l-line, a-area, d-database/spreadsheet, etc.
- location or extent information such as a Federal Information Processing Standard (FIPS) code, State Soil Survey Area ID (STSSAID) number, or state abbreviation.
- an extension

For example:

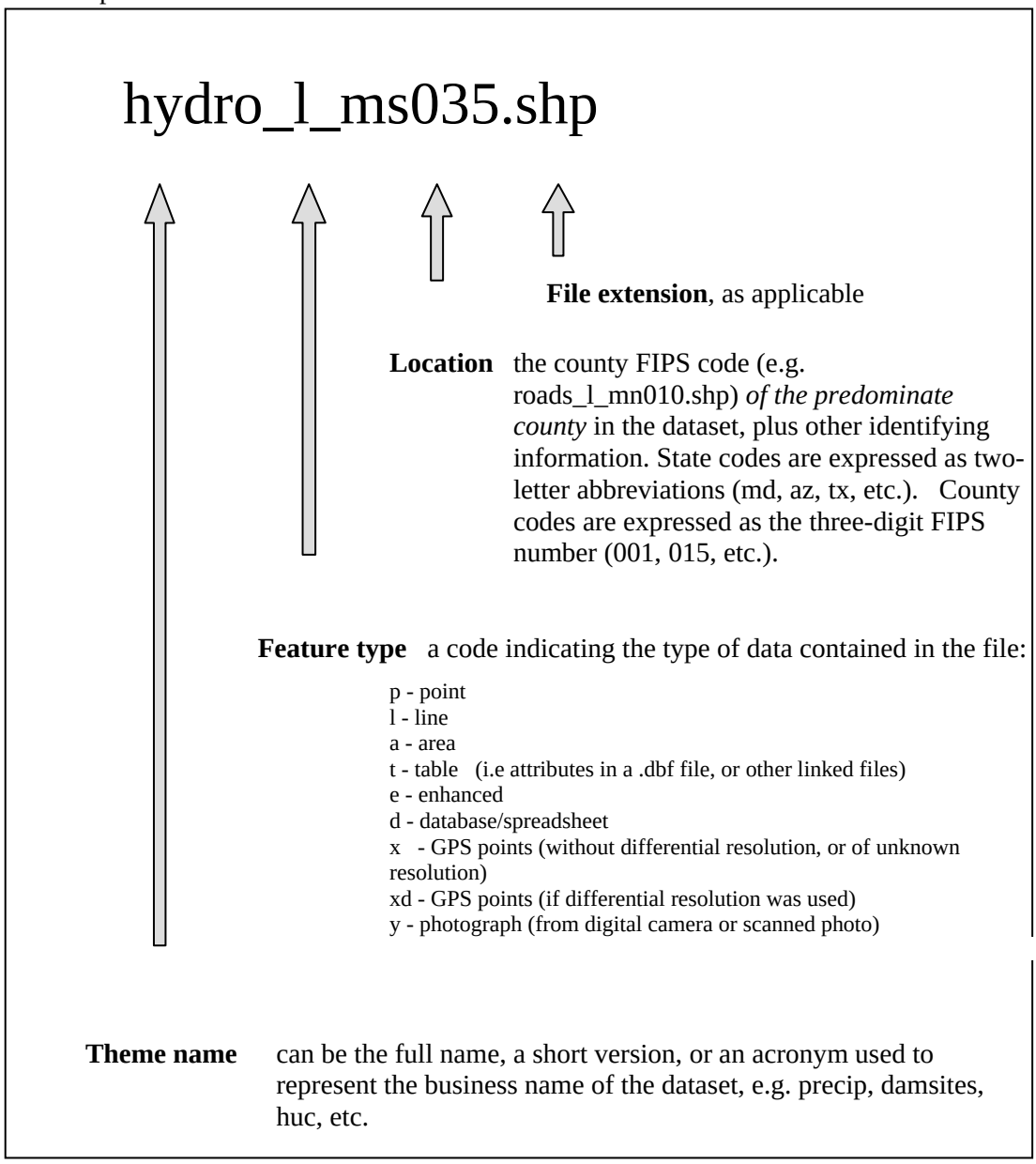

Figure 5.1 — Geospatial File Naming

6. Standard Characters

Because producers and consumers of geospatial data use computers with different operating systems, (e.g., NT, UNIX) several restrictions must be imposed on naming files to ensure all systems can access the data. The application software often places other restrictions.

6.1. Special characters

In an effort to design a list of allowable characters both computer platform and GIS software filename restrictions must be considered. In terms of operating systems, NT does not allow the characters "\ /: *? < >" in file names. Use of a "." can be problematic in NT as it indicates a file suffix.

UNIX allows any character but some of the characters in the preceding NT list can be problematic. In addition using spaces in names or beginning a name with "-" is problematic for UNIX. Beginning a name with "." in UNIX indicates a hidden file and requires additional switches to the command that produces a directory listing.

The GIS currently in operation at the BPR sites allows dashes "-" and underscores "_" but not periods ".". The full function GIS requires that a coverage name begins with a letter.

6.2. Case sensitivity

Use of upper and lower case characters in names is common and very useful in UNIX. However, this can be problematic with NT because it does not distinguish between a file named for instance "FileName" and "filename". On UNIX, the full function GIS converts all names to lowercase. The desktop GIS converts all characters to lower case for a new shapefile name.

6.3. Allowable standard characters

The allowable standard characters identified in this standard are based on the least common denominator for both operating systems and software. This approach will not impede any potential migration of *geospatial datasets* to a new platform or new software environment as technology and software enhancements are realized in the future.

Because of the combination of all these restrictions the **only** characters allowed in a standard file or directory/folder name are those in the following figure:

Allowable Characters for the Geodata File and Directory/Folder Names:

- File and folder names will consist of **only** the following:

  Lower case letters a-z

  The numerals 0-9

  The underscore “_” character

  The dash “-“ character, but only when designating mosaic tiling (x-x). Otherwise the dash is not allowed.

- The **first character** in the name shall be **a letter** (a-z).
- The total length of the name shall not exceed **30 characters.**

Figure 6.1 — Directory/Folder and File Allowable Characters

These restrictions also shall apply to *geospatial dataset category* or directory naming. These standards are very restrictive and shall not change unless the GIS platform changes with further definition from the Common Computing Environment (CCE) Team.

7. Name Length

The total length of the dataset filename shall not exceed 30 characters. This limit has been identified during Compact Disc Read Only Memory (CD-ROM) production at National Cartography and Geospatial Center (NCGC). The only CD-ROM writing format that is universally readable throughout Natural Resources Conservation Service (NRCS) is the International Standards Organization (ISO) 9660, Level 2, Mode 1 format. Exceeding this 30-character maximum for filenames becomes a problem when datasets are sent via CD-ROM to multiple computer platforms.

However, no attempt is made to adhere to the so-called 8.3 format required by older DOS operating systems (maximum of eight character name with a maximum of a three character suffix). This will cause problems for Microsoft Access 97® and Access 2000® because they can not import or link to .dbf files (such as those in a shapefile set) whose names are longer than 8.3 until they are renamed with an 8.3 compliant name. (Note: Access requires 8.3 for imported and exported dbf files even though it will handle the longer names.)

There is a 13 character maximum for coverages in the ARC/INFO® GIS. This was exceeded in this standard since it is designed to organize shapefiles and would prove to be easier to use in the Service Centers because it will lessen the need for cryptic names unfamiliar to many Service Center users. However, conversion of data either to or from coverages will require different names and additional processing.

8. Area of Interest

As mentioned previously the spatial location or extent is encoded into the name. In the current scheme most maps will be clipped or tiled to the county boundary for delivery and use unless the map is a state or national coverage. This clipped extent shall be appended to the theme name and feature type as a FIPS code or STSSAID number (e.g., roads24k_l_**ca048**.shp).

Tiling of digital geospatial data significantly impacts overall data management and system performance. In general, it is preferred that tiling is seamless, or transparent, to the user.

Clipping map extents at the county boundary is not optimal for users if they for instance wish to look at a farm or an area that crosses a county boundary. Users would prefer to be able to zoom to some arbitrary area of interest and remain unaware of the underlying database structure or tiling scheme. However, this is not possible given the current state of technology.

As a result, clipping the map data to the county boundary is the best available option for delivery and maintenance of map data. This standard's encoded file naming scheme and directory structure ensures that maps of like datasets in adjacent counties will appear next to each other in a pick list to facilitate user selection of maps.

In some cases, such as Digital Raster Graphs (DRG) and Digital Ortho Quadrangles (DOQ), an image catalog serves as an index map to 7.5-minute quad tiles for a county. This index is used to display images and conceals the underlying tiling scheme and image filenames from the user.

9. Local Data

Any GIS data that is acquired or developed locally at the Service Center shall be placed in the geodata directory along with its completed metadata. A few guidelines are offered to assist in the incorporation of this data in a logical and consistent manner.

9.1. Existing "geospatial dataset category"

If the data corresponds to one of the existing categories or directories, the map and metadata should be placed in that directory so that it appears adjacent to any nationally provided data when the user is selecting from a pick list.

There are several circumstances where various types of local Service Center data should be incorporated into the existing "geospatial dataset category" structure. They are:

- **When there is no national data and only locally developed data**, such as in the case of Wetland Reserve Program (WRP) easements data. These maps along with the Metadata should be placed in the environmental_easements directory or other relevant "geospatial dataset category" directories.
- **When there are more accurate data from local sources** the locally acquired data should be placed in the appropriate "geospatial dataset category" directories. For instance, there is locally obtained road data that are known to be more accurate than the nationally provided data named roads24k_l_<stnnn>. The locally acquired data and its metadata should be placed in the transportation directory and uniquely named according to the standard. One approach is to encode the datasets scale into the filename. For instance, roads12k_l_<stnnn>, indicates that the road map is locally acquired 1:12,000 scale data.
- **When data are created locally as the result of analysis** it should be placed under the appropriate "geospatial dataset category" directory if the data would be useful to others at a Service Center. The data should be named according to the standard and placed in the appropriate geodata directory. Otherwise, the results should be left on a personal disk drive where it is probably inaccessible to others.

9.2. project_data directory

When the *geospatial dataset category* of the locally acquired data does not fit in any of the existing categories, the data should be placed in the project_data directory for the appropriate agency.

9.2.1. Local data naming

Any locally acquired data should be named in accordance with this standard and only lower case a-z, 0-9, “-“ and "_" characters used in names as described in 6.3. Also, the theme, feature type and spatial location or extent should be encoded into the name as described in 5.1. Additionally, the name must not exceed 30 characters as described in Clause 7.

10. Geospatial Data Directory Structure: "geodata"

This section and table describes map layers common to all Service Centers.

10.1. Overview

The physical implementation of directories and file names supports the USDA Service Center Modernization Strategy to develop a basic nationally consistent set of core geospatial data that will provide a foundation on which to base business applications.

10.2. Table notations

Table 1 identifies the specific categories and geospatial files within each category and the standard naming conventions for the file. The table applies the naming guidelines set forth in 5.1 of this standard where each file name encodes: the dataset theme, feature type, and location for which the dataset applies.

Table Notations: The following notations apply to the file naming conventions used in Table 1:

- < > indicates a substitution notation
- **<f>** is the compression format **s**-MrSID **w**-ECW **j**-JP2
- **<mmm>** is the three-letter abbreviation for the applicable month (e.g., precip<mmm>_a_<st>, precipjun_a_co is the file name for Colorado June precipitation)
- **<n>** is the film type/bandwidth designator **o**-black and white **c**-color infrared **n**-natural color
- <**nn**> is the UTM Zone number 01-60
- **<nnnnn>** is a 2-digit latitude and 3 digit longitude for a one degree block
- **<nnnnnqd>** is a 2-digit latitude, 3 digit longitude, and quadrant (nw-north west ne – north east sw-south west se-south east) Applies to 30 minute by 30 minute NED 10 meter block.
- **<nnnnnnn>_<qd>** is a 2-digit latitude, 3 digit longitude, quadrangle 1-64. <**qd**> is quarter quadrant. Very similar to the USGS standard for DOQQ and DEM. Applies to NAIP quarter quads.
- <**nnnnnn**> is the NRCS office number in the Office Information Profile.
- <**ppprrr**> is landsat path and row.
- <**qd**> identifies the quarter quadrant (nw-north west ne – north east sw-south west se-south east, xx) within the full quad.
- **<r >** is the resolution 1 or 2
- **<st>** is the two character state postal abbreviation (e.g., precip_a_<st>; precip_a_co is the filename for Colorado annual precipitation).
- **<stnnn>** is the 2-character state postal abbreviation and 3-digit County FIPS codes (e.g., drg_<stnnn>, drg_md047 is the filename for Worcester County, Maryland DRG)
- **<stssaid>** is the state soil survey area ID (e.g., soils_l_<stssaid>; soils_l_md047 is the filename for Worcester County, Maryland Soil Survey Geographic Database (SSURGO) Lines)
- **us** indicates a dataset covering the entire United States, its protectorates and territories.
- **us48** indicates the conterminous or contiguous United States
- **<usgs standard>** is the standard naming convention used by the United States Geological Survey (USGS) The USGS naming standard for topographic images (DRGs) is available at http://topomaps.usgs.gov/drg/drg_name.html. The USGS naming standard for digital elevation models and digital orthoimagery is very similar except that 1-64 is used instead of a-h for a row and 1-8 for a column.
- **<v>** is the revision 1, 2, 3, …
- **<x-x>** is number - total tiles in an APFO or ERMapper county ortho mosaic. Tiles are numbered west to east and north to south. These are county subsets because the county as one map exceeds the maximum file sizes (2GB for Solaris 2.5), maximum space on CD media (650MB), and Maximum compression ratio: Lizardtech recommends a maximum of 12:1 for B/W and 20:1 for color.
- **<xx>** is the two digit hydrologic unit code (region)
- <**xxxxxxxx**> is the 8-digit hydrologic unit code
- **<yyyy>** is the calendar year.
- **<yyyymm>** is the calendar year and month.
- <**yyyymmdd**> is the date expressed as year,month, day. When entire date is not available, use at least year <**yyyy**>.

For the APFO Digital Ortho Quadrangles Mosaic imagery

— **<a>** is a substitution for the leading character that describes the Digital Ortho Quadrangles Mosaic imagery as follows:

- **m** indicates DOQQs (Digitial Ortho Quarter Quadrangles) are present and reside in native Universal Transverse Mercator (UTM) zone
- **x** indicates there is a missing DOQQ in the DOQ
- **z** represents re-projected Digital Ortho Quadrangle (DOQ) into dominant county UTM zone
- **o** for black and white (DOQQ)
- **c** for color infra red (DOQQ)
- **n** for natural color (NAIPQQ)
- **d** for DEM

The feature-type portion of a file name is one of the following:

a - area
d - database/spreadsheet
e - enhanced
l - line
p - point
t - table
x - GPS points (without differential resolution, or of unknown resolution)
xd - GPS points (if differential resolution was used)
y - photograph (from digital camera or scanned photo)

Table 1—Geospatial directory structure and naming conventions

Subfolder Name	File Name Prefix	Description
F:\geodata		Top folder in the directory structure. The following are subfolders for major theme categories under the primary geodata folder:
air_quality	File naming to be determined.	No files delivered to date.
cadastral	plss_a_<stnnn>	Public Land Survey System polygon data
	plss_l_<stnnn>	Public Land Survey System boundaries (township/range/section) for cartographic display.
census	block_group_taoa2_a_ <stnnn>	Tele Atlas other named areas 2 - census block groups.
	block_groups_a_<stnnn>	Demographic block group data tabulated by census geography from Bureau of Census. Other base map TIGER features such as road, hydro etc are in appropriate theme folders.
	block_taao3_a_<stnnn>	Tele Atlas other named areas 3 - census blocks.
	blocks_a_<stnnn>	Demographic block data tabulated by census geography from Bureau of Census.
	tract_taao1_a_<stnnn>	Tele Atlas other named areas 1 – census tract.
	tracts_a_<stnnn>	Demographic tract data tabulated by census geography from Bureau of Census.
	urban_taao4_a_<stnnn>	Tele Atlas other named areas 4 – census urban.

Subfolder Name	File Name Prefix	Description
climate\precipitation	precip_a_<st>	'precipitation' is a subfolder of 'climate'. Annual precipitation (sum of 12 monthly maps) for the entire state. <st> is equal to the state two character postal abbreviation
	precip_l_<st>	Annual precipitation boundaries for cartographic display for the entire state
	precip<mmm>_a_<st>	Mean (1961-1990) Monthly precipitation data for the entire state. <mmm> is equal to the three-letter abbreviation for the applicable month
	precip<mmm>_l_<st>	Monthly precipitation boundaries for the entire state. <mmm> is equal to the three-letter abbreviation for the applicable month
climate\temperature	File naming to be determined.	'temperature ' is a subfolder of 'climate'. No files delivered to date.
common_land_unit	dlu_a_<stnnn>	District Land Unit (DLU) – Farm field boundary layer.
	clu_a_public_<stnnn>	Common Land Unit (CLU) Farm Field Boundary with most all attributes removed.
	clu_a_copy _<stnnn>	Common Land Unit (CLU) Farm Field Boundary NRCS read-only copy.
common_land_unit\fsa_clu	crp_t_<stnnn>	CRP data linked to CLU. (May be in the form of converted .dbf files. Would include compliance and crop reporting.)
	clu_a_<stnnn>	Common Land Unit (CLU) Farm Field Boundary
	wet_p_<stnnn>	FSA wetland point data
conservation_practices	File naming to be determined.	Planned and applied conservation practice data aggregated for the Service Center.
cultural_resources	File naming to be determined.	Archeology, state historic sites, Native American settlements and burial grounds, National Park Service National Register of Historic Places, National Historic Landmarks and National Natural Landmarks. A general category and no files delivered to date.
disaster_events	<disaster type>_a_<stnnn> _ <identifier>	Describes the area (or points if feature type is a 'p') affected by a natural disaster, with a unique name or identifier for the event. Disaster type describes whether the event was a flood, storm, etc. The unique event identifier is a date, unless some other identifying code is assigned, such as a version number. State and county can be included depending on the scope of the disaster area.
disaster_events\ fsa_facilities	ffl_p_<stnnn>	Point locations within the county of Fertilizer Facilities
	ffsfl_p_<stnnn>	Point locations within the county of Food, Feed, and Seed Facilities
ecological	File naming to be determined.	No files delivered to date.
elevation	contour_l_<stnnn>	1:24,000 USGS hypsography line data
	ngs_p_<stnnn>	Point location and description of National Geodetic Survey Monuments
	ned10m_<nnnnnqd>	1:24,000 USGS National Elevation Dataset (NED) 10 meter with elevations portrayed in decimeters. Sixteen 7.5 minute quadrangles packaged into a 30 minute by 30 minute block archive. Where each block is an ArcInfo workspace containing 7.5 minute data.
	ned30m_<nnnnn>	1:24,000 USGS National Elevation Dataset

Subfolder Name	File Name Prefix	Description
		(NED) 30 meter merged into a one-degree seamless raster format with elevations portrayed in decimeters.
	nez30m _<nnnnn>	Reprojected 1:24,000 USGS National Elevation Dataset (NED) 30 meter from adjacent UTM zone merged into one-degree block
	nedshd10m _<nnnnnqd>	1:24,000 USGS National Elevation Dataset (NED) 10 meter merged into a 30 minute by 30 minute seamless shaded relief TIFF format.
	nedshd30m _<nnnnn>	1:24,000 USGS National Elevation Dataset (NED) 30 meter merged into a one-degree seamless shaded relief TIFF format.
	nezshd30m _<nnnnn>	Reprojected 1:24,000 USGS National Elevation Dataset (NED) 30 meter from adjacent UTM zone merged into a one-degree seamless shaded relief TIFF format.
	nedmeta10m_<nnnnnqd>	1:24,000 USGS National Elevation Dataset (NED) 10 meter metadata shape files for the individual quadrangles that compose the ned.
	nedmeta30m_<nnnnn>	1:24,000 USGS National Elevation Dataset (NED) 30 meter metadata shape files for the individual quadrangles that compose the ned.
	nezmeta30m_<nnnnn>	Reprojected 1:24,000 USGS National Elevation Dataset (NED) 30 meter metadata shape files from adjacent UTM zone for the individual quadrangles that compose the ned.
	<usgs standard>	USGS Digital Elevation Model (DEM) ASCII file. USGS standard lat/long name with a "d" leading character. File extension is .dem
endangered_habitat	File naming to be determined.	No files delivered to date.
environmental_easements	wrp_a_<st>	Aggregation of Wetland Reserve Program (WRP) easements for State Service Centers. Data developed locally.
	wrp_a_<stnnn>	Aggregation of WRP easements for a specific Service Center area. No files delivered to date. Data developed locally
environmental_easements \fsa	flpce_a_<stnnn>	Farm Loan Program Inventory Property (Conservation) Easements. Data developed locally.
	flpct_a_<stnnn>	Farm Loan Program Conservation Transfers. Data developed locally.
	dfn_a_<stnnn>	Debt for Nature easements. Data developed locally.
geographic_names	gnis_p_<stnnn>	Geographic Names Information Systems point data from GNIS cultural and topographic non-populated places file
	poi_tapi_p_<stnnn>	Tele Atlas points of interest
	settlement_tasm_p_ <st>	Tele Atlas settlement centers
geology	File naming to be determined.	No files delivered to date.
government_units	blm_a_<stnnn>	Bureau of Land Management Polygon Data
	city_taap_a_ <st>	Tele Atlas administrative places – city boundaries
	community_taa9_a_ <stnnn>	Tele Atlas administrative areas 9 – minor and county civil divisions
	congdist_<nnn>_a_<st>	Full US congressional districts 104 – 108 from Bureau of Census TIGER data. <nnn> is the

Subfolder Name	File Name Prefix	Description
		congress number e.g. 108
	city_p_<stnnn>	Geographic Names Information Systems point data from GNIS populated places file
	cnty100k_a_<stnnn>	1:100,000 county boundary polygon from Census TIGER data
	cnty100k_l_<stnnn>	1:100,000 county boundaries for cartographic display from Census TIGER data.
	county_taa8_a_<stnnn>	Tele Atlas administrative areas 8 – county boundaries
	ntlforest_a_<stnnn>	National Forests Polygon data
	ntlforest_l_<stnnn>	National Forests Line boundaries for cartographic display
	ntlpark_a_<stnnn>	National Park Polygon data
	ntlpark_l_<stnnn>	National Park Line boundaries for cartographic display
	tribal_a_<stnnn>	Native American Indian Lands
	rcd_a_us	Full US Resource Conservation & Development Areas polygon data
	state_a_us	Full US state polygons
	state_l_us	Full US state boundaries for cartographic display
	state_taa1_a_<st>	Tele Atlas administrative areas 1 - state boundaries
	swcd _a_us	Full US Soil and Water Conservation District polygon data
	urban_a_<st>	1:100,000 urban area polygons from Bureau of Census TIGER data
	zip_p_us	Full US zip code centroids (points). GIS Implementation Team to identify data source
	zipcode_tapd_a_<st>	Tele Atlas postal districts – zip codes
hazard_site	File naming to be determined.	No files delivered to date
hydrography	damsite_p_<stnnn>	National Inventory of Dams point data
	femaq3_a_<stnnn>	Federal Emergency Management Agency (FEMA) polygon data
	hydro_tawl_l_<stnnn>	Tele Atlas water lines
	hydro100k_l_<stnnn>	1:100,000 Census TIGER line data for hydrology
	nhd24kst_l_<xxxxxxxx>	1:24,000 USGS/EPA National Hydrography Dataset **streams** line data by 8 digit sub basin
	nhd24kar_a_<xxxxxxxx>	1:24,000 USGS/EPA National Hydrography Dataset polygon **area reach** data by 8 digit sub basin
	nhd24kwb_a_<xxxxxxxx>	1:24,000 USGS/EPA National Hydrography Dataset polygon **water body** data by 8 digit sub basin
	ssara_p_<stnnn>	Sole source aquifer recharge areas
	watbod_tawa_a_<stnnn>	Tele Atlas water areas
	watbod_a_<stnnn>	1:100,000 Census TIGER area features for water bodies hydrology
hydrologic_units	huc250k_a_<xx>	1:250,000 8-digit hydrologic unit polygon data by region (huc2)
	wbdhu8_a_<xx>	1:24,000 8-digit hydrologic unit polygon data at the 1st, 2nd, 3rd, and 4th level by region (huc2)
	wbdhu8_l_<xx>	1:24,000 8-digit hydrologic unit line data at the 1st, 2nd, 3rd, and 4th level by region (huc2)
	wbdhu12_a_<xxxxxxxx>	1:24,000 12-digit polygon data at the 4th, 5th and 6th level by sub-basin (huc8)

Subfolder Name	File Name Prefix	Description
	wbdhu12_l_<xxxxxxxx>	1:24,000 12-digit line data at the at the 4th, 5th and 6th level by sub-basin (huc8)
imagery	landsat_<stnnn>_<ppprrr>_<yyyymmdd>	Other imagery files such as satellite or non-standard imagery. <ppprrr> is path and row.
imagery\compliance_fsa	comp_<nnnnnnn>_<yyyymm>	Annual Compliance imagery – *other* than 35 mm slides. <nnnnnnn> equates to two numbers for latitude, three numbers for longitude and two numbers for the 01 to 64 quadrangle numbers in the one degree block
	<a><nnnnnnn>_<qd>_<r>_<yyyymmdd>	USDA National Agricultural Imagery Program two meter (<r>=2) quarter quads in GeoTIFF format (.tif). <a> is leading character set to 'n' for natural color. <nnnnnnn>, is two numbers for latitude, three numbers for longitude and two numbers for the 01 to 64 quadrangle number in the one degree block. <qd> is quarter quadrant. <yyyymmdd> is image date.
	naip_<x-x>_<r><n>_<f>_<stnnn>_<yyyy>_<v>	USDA National Agricultural Imagery Program county mosaic of quarter quads. One and two <r> meter inspected and approved. <x-x> is number-total tiles in county mosaic. File extension of MrSID image is .sid.
	slides_<stnnn>_<fffeee>_<yyyymm>	Scanned 35mm or digital slides. <fffeee> is the flight and exposure number. Example: slides_va013_048009_200207.tif
	slides_<stnnn>_t<nn>_r<nn>_ s<nn>_<yyyymm>	Scanned 35mm or digital slides. t<nn> is township, r<nn> is range, s<nn> is section. Example: slides_mn013_t34_r26_s15_200207.tif
land_site	aboveground_storage_p_<stnnn>	County coverage of the location points of aboveground storage facilities. Any kind of storage or particular types of storage
	housing_p_<stnnn>	Location points for instances of housing developments and/or foreclosures, within a county
	lagoon_p_<stnnn>	Location points for lagoons and similar areas in a county
	livestock_facility_p_<stnnn>	Location points of feedlots, poultry facilities, etc. within a county
	stackyd_a_<stnnn>	Polygons of stackyards for hay/silage storage in a county
	storage_p_<stnnn>	Location points for grain bins and similar facilities in a county
	underground_storage_p_<stnnn>	County coverage of the location points of underground storage facilities
	well_p_<stnnn>	Point data for locating well heads within a county
land_use_land_cover	landuse_talu_a_<stnnn>	Tele Atlas land use
	lulc_a_<stnnn>	Polygon data of the USGS Land Use Land Cover
	nonveg_a_<stnnn>	1:24,000 USGS non-vegetative polygon data (sand area, beach, gravel beach, etc.)
	nlcd_<st>_utm<nn>	30 meter USGS/EPA National Land Cover Dataset raster data. The dataset is available in multiple UTM zones for states in more than one zone
	surfcvr_a_<stnnn>	1:24,000 USGS surface cover polygon data (woods, brush, orchard, etc.)
	File naming to be	Vegetation distribution, etc.

Subfolder Name	File Name Prefix	Description
	determined.	
land_use_land_cover\ fsa_compliance	crl_a_<stnnn>_<yyyy>	Acreage reporting data created by FSA's Crop Reporting Tool (an R&D tool). Data is created locally for each farm, then merged into one county file. Is used in SC with CLU
	land_use_a_<stnnn>	Commodity (acreage) reporting data created by the FSA Land Use pilot application. Will be run in only three counties in 2002 using SQL Server. Up to ten years of data is kept in one file – not an annual file.
	land_use_d_<stnnn>	Commodity (acreage) reporting data created by the FSA Land Use pilot application. Will be run in only three counties in 2002 using SQL Server. All polygon data is kept in one file – not an annual file
map_indexes	napp_p_<stnnn>	National Aerial Photography Program (NAPP) point data
	quads12k_a_<stnnn>	1:12,000 quarter quad polygon data
	quads20k_a_<stnnn>	1:20,000 7.5x7.5 quad polygons
	quads24k_a_<stnnn>	1:24,000 7.5x7.5 quad polygons
	quads25k_a_<stnnn>	1:25,000 7.5x7.5 and 7.5x15 quad polygons
	quads63k_a_<stnnn>	1:63,360 15x15 quad polygons
	quads100k_a_<st>	1:100,000 30x60 quad polygons
	quads30m_a_<st>	30 minute NED quad polygons for ned10m
	quads1deg_a_<st>	One degree NED quad polygons for ned30m
	quads250k_a_<st>	1:250,000 one degree by two degree quad polygons
measurement_services	meas_service_a_ <stnnn>_<yyyy>	Yearly file for all area measurement services
ortho_imagery	highres<x-x>_<f>_<stnn>	NRCS or NCGC county ortho mosaic from high resolution imagery (less than one meter). <x-x> is number-total tiles in county mosaic. File extension of .sid depicts a MrSID image, while file extension of .ecw depicts an ERMapper image.
	ortho_<x-x>_1<n>_<f>_ <stnnn>_<yyyy><v>	USDA National Agricultural Imagery Program county mosaic of quarter quads. One meter inspected and approved. <x-x> is number-total tiles in county mosaic. File extension of MrSID image is .sid. These are NAIP images after thorough inspection, metadata update and include any reworked images that did not meet specifications. They are updated and renamed images from \imagery\compliance_fsa
	ortho_e<x-x>_<f>_ <stnnn>	APFO MrSID county ortho mosaic of enhanced MDOQ. <x-x> is number-total tiles in county mosaic. File extension of MrSID image is .sid.
	ortho<x-x>_<f>_<stnnn>	NCGC or NRCS county ortho mosaic of DOQQ. <x-x> is the number of total tiles in county mosaic. File extension of .sid depicts a MrSID image, while file extension of .ecw depicts an ERMapper image.
	ortho_<st>_<f>_<nnnnnn>	NRCS field office multi-county service area (defined in Office Information Profile database as the NRCS OIP office ID) ortho mosaic. File extension of MrSID image is .sid.
	<a><nnnnnnn>_<qd>_	USGS DOQQ –Raster format (.bil, .bsq, .bip).

Subfolder Name	File Name Prefix	Description
	<yyyymmdd>	<a> is leading character either 'o' for black and white or 'c' for color infra red. <nnnnnnn>, two numbers for latitude, three numbers for longitude and two numbers for the 01 to 64 quadrangle number in the one degree block. <qd> is quarter quadrant. <yyyymmdd> is image date.
	<a><nnnnnnn>_ <yyyymmdd>	APFO DOQ .tif image. <a><nnnnnnn> is leading character, two numbers for latitude, three numbers for longitude and two numbers for the 01 to 64 quadrangle number in the one degree block. <yyyymmdd> date is optional. Leading character <a> can be: m – all DOQQs present and reside in native UTM zone x – there is a missing DOQQ in the DOQ z – re-projected DOQ into dominant county UTM zone.
	<a><nnnnnnn>_<qd>_<r>_ <yyyymmdd>	USDA National Agricultural Imagery Program one meter (<r>=1) quarter quads in GeoTIFF format (.tif). <a> is leading character set to 'n' for natural color. <nnnnnnn>, is two numbers for latitude, three numbers for longitude and two numbers for the 01 to 64 quadrangle number in the one degree block. <qd> is quarter quadrant. <yyyymmdd> is image date.
project_data		Subfolders for agency-specific data that does not fit under the major geodata theme subfolders. Subfolders for each agency or organization may be created as needed.
project_data\fsa	File naming to be determined	
project_data\nrcs	File naming to be determined	
project_data\rd	chattel_p_ <stnnn>	Known location points for customer-owned, moveable property, in a county. Multiple assets may be linked to a point
	chattel_y_<stnnn> <sequence_number>	Photographs associated with the customer chattel points file. If multiple photos, they can be distinguished with a sequence number, or other identifying information.
project_data\rcd	File naming to be determined	Resource Conservation District
project_data\swcd	File naming to be determined	Soil and Water Conservation District
public_utilities	File naming to be determined.	
soils	crpdata_d_<stssaid>	NOT A MAP-Excel spreadsheet with 1990 frozen soils data used for Conservation Reserve Program (CRP) eligibility determinations. <stssaid> State Soil Survey Area ID number (e.g., crpdata_d_ca048.xls)
	mlra_a_us	Full US Polygon data of Major Land Resource Areas (MLRA)
	ssa_a_<stssaid>	Polygon data limit of Soil Survey Area (SSA)
/soil__<stssaid>**/tabular**	soil_d_ <stssaid>	NOT A MAP-Access database of soil survey attribute data in the current SSURGO structure format.
/soil__<stssaid>**/spatial**	soilsa_a_<stssaid>	Soil survey area boundary polygons

Subfolder Name	File Name Prefix	Description
/soil__<stssaid>**/spatial**	soilmu_a_<stssaid>	Soil map unit boundary polygons
/soil__<stssaid>**/spatial**	soilmu_l_<stssaid>	Soil line map units
/soil__<stssaid>**/spatial**	soilmu_p_<stssaid>	Soil point map units
/soil__<stssaid>**/spatial**	soilsf_l_<stssaid>	Soil line spot features
/soil__<stssaid>**/spatial**	soilsf_p_<stssaid>	Soil point spot features
/soil__<stssaid>**/spatial**	soilsf_t_<stssaid>	Soil spot features description
/soil__< nnnnnn>**/tabular**	soilmosaic_d_<nnnnnn>	Merged attribute data for more than one soil survey area to support service center area of service. <nnnnnn > is the OIP office ID not OIP site ID
/soil__< nnnnnn>**/spatial**	soilmosaicsa_a_<nnnnnn>	Merged soil survey area boundary polygons for more than one soil survey area to support service center area of service. <nnnnnn > is the NRCS OIP office ID not OIP site ID
/soil__< nnnnnn>**/spatial**	soilmosaicmu_a_<nnnnnn>	Merged soil map unit boundary polygons for more than one soil survey area to support service center area of service. <nnnnnn > is the NRCS OIP office ID not OIP site ID
/soil__< nnnnnn>**/spatial**	soilmosaicmu_l_<nnnnnn>	Merged line map units for more than one soil survey area to support service center area of service. <nnnnnn > is the NRCS OIP office ID not OIP site ID
/soil__< nnnnnn>**/spatial**	soilmosaicmu_p_<nnnnnn>	Merged point map units for more than one soil survey area to support service center area of service. <nnnnnn > is the NRCS OIP Office ID not OIP site ID
/soil__< nnnnnn>**/spatial**	soilmosaicsf_l_<nnnnnn>	Merged line spot features for more than one soil survey area to support service center area of service. <nnnnnn > is the NRCS OIP Office ID not OIP site ID
/soil__< nnnnnn>**/spatial**	soilmosaicsf_p_<nnnnnn>	Merged point spot features for more than one soil survey area to support service center area of service. <nnnnnn > is the NRCS OIP Office ID not OIP site ID
/soil__< nnnnnn>**/spatial**	soilmosaicsf_t_<nnnnnn>	Merged spot feature descriptions for more than one soil survey area to support service center area of service. <nnnnnn > is the NRCS OIP Office ID not OIP site ID
topographic_images	drg_<stnnn>	County mosaic MrSID of 1:20K, 1:24K, 1:25K Digital Raster Graphs without map collar. File extension of MrSID image is .sid.
	drg_<st><nnnnnn>	NRCS field office multi-county service area (defined in Office Information Profile database as the NRCS Office ID) DRG mosaic. File extension of MrSID image is .sid.
	<usgs standard>_<yyyy>	Enhanced DRG image with map collar removed. Map content date <yyyy> is optional for more than one set. The following characters are used in the usgs standard: r – 1:20,000, 7.5’ x 7.5’ topographic map image o – 1:24,000, 7.5’ x 7.5’ topographic map image p – 1:24,000, 7.5’ x 7.5’ provisional/orthophoto map image l – 1:25,000 7.5’ x 7.5’ topographic map image j – 1:30,000, 7.5’ x 7.5’ topographic map image

Subfolder Name	File Name Prefix	Description
		k – 1:25,000, 7.5' x 15' topographic map image i – 1:63,360, Alaska topographic map image g – 1:100,000, 30' x 60' planimetric map image f – 1:100,000, 30' x 60' topographic map image c – 1:250,000, 1 x 2 degree topographic map image
transportation	misctrans100k_l_<stnnn>	1:100,000 Census TIGER line data for pipelines, power transmission lines, etc.
	railroad_tarr_l_<stnnn>	Tele Atlas railways
	railroads100k_l_<stnnn>	1:100,000 Census TIGER line data for railroad layer
	roads100k_l_<stnnn>	1:100,000 Census TIGER roads line data
	road_tanw_l_<stnnn>	Tele Atlas network roads
wetlands	nwi_a_<stnnn>	Polygon data of the National Wetland Inventory (NWI) Fish and Wildlife Service (FWS)
	nwilfetr_l_<stnnn>	Linear Features line data of the NWI
	nwi_l_<stnnn>	Outlines of the NWI polygon data for cartographic display
	nwi_p_<stnnn>	Point data of the NW I
	wetland_l_<stnnn>	Boundaries of natural or constructed wetlands, by county.
wildlife	File naming to be determined.	No files delivered to date.
zoning	File naming to be determined.	No files delivered to date.

As needed, the following subfolders can be added as an additional layer of subfolders under each of the major *geodata* theme folders:

gps_data	<subject>_xd_<stnnn>_<yyyymmdd>	A file of GPS points downloaded from a GPS instrument. The data in this file is kept in its original GPS-specific format. The subject describes what the data represents, i.e. "Grain Bins". If this GPS data is imported into a GIS system, the resulting file would have a different feature type, i.e. 'p' if it is saved as a point data GIS file.
photographs	<identifier>_y_<yyyymmdd>_<sequence number>	<Identifier> = the basic content of the photo, i.e. "Grain Bins on Smith Farm". Date indicates when the photo was taken. If multiple pictures were taken, a sequence number (i.e. 1, 2, 3) can be added to give each photo a unique name.

Appendix A – Bibliography

When the following standards are superseded by an approved revision, the revision shall apply.

[A1] Geospatial Data Acquisition, Integration, and Delivery National Implementation Strategy Plan, Draft #4 Service Center Business Process Reengineering Data AID Team, September 22, 1999

[A2] SCMI Std 003, Standard for Geospatial Data Set Metadata

[A3] SCMI Std 005, Standard for Geospatial Feature Metadata

[A4] SCMI Std 007, Standard for Geospatial Data

[A5] USDA Service Center Geographic Information System (GIS) Strategy, Interagency Team, August 18, 1998

[A6] USDA Service Center Initiative Directory Structure and File Naming Convention Change Control Policy, Initial Draft, IO Lab, October 8, 1999

[A7] Manual for Managing Geospatial Datasets in Service Centers, AFY00.60000-00.UA0-SCM, February 2003